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Applicants : Craig F. Culver
Ser. No. : 09/393,998
Filed : September 8, 1999
For : Interface Control
Examiner : Chow, Doon Y.
Art Unit : 2675
Docket No. : IMM060.RE

Mail Stop: Non-Fee Amendment
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

This Information Disclosure Statement is being submitted following a Office Action Summary in this application. Accordingly, a fee of \$180.00 is included herewith for consideration of this Information Disclosure Statement. However, should any other fees be due, the Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §§ 1.16 or 1.17 which may be required during the entire pendency of this application, or to credit any overpayment, to Deposit Account No. 16-1435. A duplicate of this sheet is attached for that purpose.

It is respectfully requested that the references listed on the attached form be expressly considered by the Examiner and be made of record in the application and appear among "References Cited" on any patent to issue therefrom.

09/18/2003 DTESSEN1 00000056 09393998

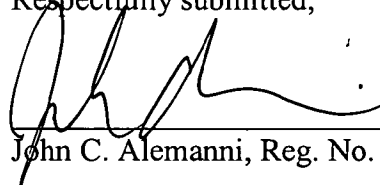
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Dated: September 16, 2003

Respectfully submitted,

By:



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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 5

Complete if Known

Application Number	09/393,998
Filing Date	September 8, 1999
First Named Inventor	Culver, Craig
Art Unit	2675
Examiner Name	Chow, Dennis-Doon
Attorney Docket Number	IMM060.RE

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	3,220,121	11/30/1965	Cutler	
	AB	3,517,446	6/30/1970	Corlyon et al.	
	AC	3,903,614	9/9/1975	Diamond et al.	
	AD	4,236,325	10/2/1980	Hall et al.	
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	AG	4,708,656	11/24/1987	De Vries et al.	
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	AU	4,930,770	6/5/1990	Baker	
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	AX	5,038,089	8/6/1991	Szakaly	
	AY	5,078,152	1/7/1992	Bond	
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	BH	6,422,941	7/23/2002	Thomer et al.	
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	BK	6,219,034	4/17/01	Elbing, et al.	

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Sheet **2** of **5****Complete if Known**

Application Number	09/393,998
Filing Date	September 8, 1999
First Named Inventor	Culver, Craig
Art Unit	2675
Examiner Name	Chow, Dennis-Doon
Attorney Docket Number	IMM060.RE

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
	BL	EP	0349086		1/3/1990	Stork Kwant B.V.	✓
	BM	JP	01-003664		7/19/1990	Taito Corporation	✓
	BN	JP	02-109714		1/13/1992	Epoch Co. and Key- Planning Co.	✓
	BO	JP	03-193862		1/27/1995	Sega Corporation	✓
	BP	JP	04-087371		8/3/1993	Taito Corporation	✓

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**INFORMATION DISCLOSURE
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Sheet **3** of **5****Complete if Known**

Application Number	09/393,998
Filing Date	September 8, 1999
First Named Inventor	Culver, Craig
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Examiner Name	Chow, Dennis-Doon
Attorney Docket Number	IMM060.RE

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	BQ	BAIGRIE, "Electric Control Loading - A Low Cost, High Performance Alternative." Proceedings, pp. 247-254, November 6-8, 1990.
/WB/	BR	IWATA, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp 287-292, 1993.
/WB/	BS	RUSO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives 08/14/1990, pp. 1-131, May 1990.
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	BU	JONES et al., "A perceptual analysis of stiffness." ISSN 0014-4819 Springer International (Springer-Verlag): Experimental Brain Research, Vol. 79, No. 1, pp. 150-156, 1990.
	BV	BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1999 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993.
	BW	SNOW et al., "Model-X Force-Reflecting-Hand-Controller." NT Control No. MPO-17851; JPL Case No. 5348, pp. 1-4, 06/15/1989.
	BX	CHUN-YOUNG, "Force Display in Molecular Docking," Order No. 9634744, p. 1-369, 1990.
	BY	TADROS, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," MIT Archive © Massachusetts Institute of Technology, pp. 1-88, February 1990.
	BZ	CALDWELL et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.
/WB/	CA	ADELSTEIN, "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, Advances in Robotics, Edited by H. Kazerooni, pp. 1-12, 1992.
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	CC	STANLEY et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, Advances in Robotics, pp. 55-61, ASME 1992.
	CD	RUSO, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, Advances in Robotics, pp. 63-70, ASME 1992.

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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	CE	KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," Telemanipulator Technology and Space Telerobotics, Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993.
	CF	PATRICK et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," Cooperative Intelligent Robotics in Space, Rui J. deFigueiredo et al., Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990.
	CG	ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," Ph.D. Dissertation, Dept. of Mechanical Engineering, MIT, June 1989.
	CH	BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," Science, Vol. 208, No. 4450, pp. 1327-1335, 1980.
	CI	BEJCZY, "Generalization of Bilateral Force-Reflecting Control of Manipulators," Proceedings Of Fourth CISM-IFTOMM, Sep. 8-12, 1981.
	CJ	MCAFFEE, "Teleoperator Subsystem/Telerobot Demonstration: Force Reflecting Hand Controller Equipment Manual," JPL D-5172, pp. 1- 50, A1-A36, B1-B6, C1-C36, January 1988.
	CK	MINSKY, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," Ph.D. Dissertation, MIT, June 1995.
	CL	JACOBSEN et al., "High Performance, Dexterous Telerobotic Manipulator With Force Reflection," Intervention/ROV '91 Conference & Exposition, Hollywood, Florida, May 21-23, 1991.
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	CN	IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990.
	CO	TERRY et al., "Tactile Feedback In A Computer Mouse," Proceedings of Fourteenth Annual Northeast Bioengineering Conference, University of New Hampshire, March 10-11, 1988.
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	CQ	EBERHARDT et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," IEEE Virtual Reality Annual International Symposium, Seattle, WA, Sep. 18-22, 1993.
	CR	RABINOWITZ et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contactor area," Journal of The Acoustical Society of America, Vol. 82, No. 4, October 1987.

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Sheet 5 of 5**Complete if Known**

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	CS	BEJCZY et al. "Kinesthetic Coupling Between Operator and Remote Manipulator." International Computer Technology Conference, The American Society of Mechanical Engineers, San Francisco, CA, August 12-15, 1980.
	CT	BEJCZY et al. "A Laboratory Breadboard System For Dual-Arm Teleoperation." SOAR '89 Workshop, ISC, Houston TX, July 25-27, 1989.
	CU	OUH-YOUNG, "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," IEEE Transactions on Consumer Electronics, Vol. 41, No. 3, August 1995.
	CV	MARCO, "Touch Feedback in Surgery," Proceedings of Virtual Reality and Medicine The Cutting Edge, Sep. 8-11, 1994.
	CW	BEJCZY, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987.
	CX	AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
	CY	FRERHARDT et al., "Including Dynamic Haptic Perception by The Hand: System Description and Some Results," DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1, ASME 1994.
	CZ	GOBEL et al., "Tactile Feedback Applied to Computer Mice," International Journal of Human-Computer Interaction, Vol. 7, No. 1, pp. 1-24, 1995.
	DA	PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
	DB	Cyberman Technical Specification, Logitech Cyberman SWIFT Supplement, 4/5/1994.
	DC	OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95, Seoul, Korea, 21-24 August 1995.
	DD	KACZMAREK et al., "Tactile Displays," Virtual Environment Technologies.
	DE	SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994.

Examiner
Signature

/William Boddie/

Date
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05/07/2010

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